

to so large a size.¹ Unlike most Kánara forests there is very little evergreen timber in Haliyál, only two small patches in Kaule and Shirolí. Useful bamboos, large, middle-sized, and small, are found in most forests. The large bamboos seeded in 1868-69 and the new crop is not yet ready for use. The chief sources of revenue are grazing fees and timber and bamboo sales. There are no myrobalans, soapnuts, or other minor products. The Haliyál forests, which are best towards the south and west, may be arranged into three blocks or groups: Shirolí-Kalbhávi in the south-west with fourteen villages and 43,000 acres; Kegdol-Rámápur in the north-west with thirty-four villages and 73,000 acres; and Aralvád-Muttalmuri in the east with ninety villages and 45,000 acres. The Shirolí-Kalbhávi group, along the Kálinadi, Káneri and Tattihalla, includes the forest lands of fourteen villages² with an area of about 43,000 acres, 2663 of which are set apart for grazing, and a population of 669, chiefly Maráthás, with a few Sídis and Musalmáns. This forms an unbroken block of the first importance and value, with splendid forests of teak, blackwood and other valuable timber. Except Shirolí, Sanmaggi, and Kaule forests, overlooking the Kálinadi, timber, when cut, will have to be dragged to the Kálinadi and floated to the Kodibág store near Kárwár, these forests are taken to carts from the east. The forests of the first nine villages have been little worked except for dead wood. The others have been more worked, but have still vast stores of teak and other fine timber. The Kegdol-Rámápur group in the north-west, lying along the Kálinadi and the Katnal and Barchi streams, includes the forests of thirty-four villages,³ with an area of about 73,000

Chapter II. Production.

Forests.
Haliyál.

¹ The leading trees of the Haliyál forests are *Ságván*, *Tectona grandis*; *mattí*, *Terminalia tomentosa*; *kindál*, *Terminalia paniculata*; *holemattí*, *Terminalia Arjuna*; *goting*, *Terminalia bellerica*; *nandí*, *Lagerstræmia microcarpa*; *honi*, *Pterocarpus Marsupium*; *shisham*, *Dalbergia latifolia*; *karimattál*, *Ougeinia dalbergioides*; *hedde*, *Adina cordifolia*; *kálamb*, *Naucllea parvifolia*; *kumbia*, *Careya arborea*; *jámba*, *Xylia dolabriformis*; *dindál*, *Anogeissus latifolia*; and *sagdí*, *Schleichera trijuga*.

² The villages are: *Shirolí-Kalbhávi Group, Haliyál.*

VILLAGES.	Acres.	VILLAGES.	Acres.	VILLAGES.	Acres.
Shirolí	1662	A'mbge	5433	Gutti	2421
Sannamaggi ...	2432	Phansoll	2789	Kalbhávi	1049
Kaule	2876	Kulagi	3338		
Vincholi	3094	Kumbharkop ...	1914		
A'mbgaum	3047	Addigeri	6063	Total	42,911
Jámbe	3426	Badákánsirda ...	3268		

³ The details are: *Kegdol-Rámápur Group, Haliyál.*

VILLAGES.	Acres.	VILLAGES.	Acres.	VILLAGES.	Acres.
Kegdol	1266	Naranaballi	1508	Ambevadi	3995
Malavadi	1281	Sámbráni	2612	A'tur	4593
Hararod	2499	Ráypattan	3336	Bedar Shirgur ...	3065
Bomanhalli	3008	Chimanhalli	984	Vitál	1214
Bhágvati	3589	Malnol	1010	A'jurni	2884
Bhimanhalli	2111	Oadgeri	1316	Handil	1378
Machápur	4289	Gardoll	2443	Kesarodge	6192
Bogur	1180	Tátgera	1176	Shingatgeri	1140
Tattigeri	1411	Kariyanpáli	1235	Ámbargi	1468
Thákur-Basápur ...	456	Kerrád	1817	Rámápur	880
Malvád	3324	Dándell	700		
Chotákánsirda ...	1692	Kumbharkopp ...	742	Total	72,904.

Chapter II. Production.

Forests. *Haliyál.*

acres, of which 7700 have been set apart for grazing, and a population of about 2300, mostly Shenvi Bráhmans, Maráthás, Christians, Vadars, Dheds, Sidis, and Musalmáns. Many of the villages are deserted, and except Sámbráni none of them has more than a dozen huts. The forests are everywhere open to carts. They have been regularly worked for the last sixteen years, but still contain a large stock of mature teak and other valuable timber of great size. Especially in Sámbráni, Ráypattan, Náranhalli, Chotákánsirda, Bomanhálli, Málvád, Thákur-Basápur Máchápur, Bhimanhalli, Bhágvati, and Addigeri, they yield immense numbers of middle-sized and small bamboos which are in great demand in Belgaum and Dhárwár.¹ In spite of every effort to stop them, fires are common. They are either caused by carelessness or wilfully lighted by herdsmen and hunters.

The Arálvad-Muttalmuri group, along the eastern frontier, includes the forests of ninety villages with an area of 45,353 acres, in 32,732 of which grazing is allowed,² and a population of about 25,000, chiefly Shenvi Bráhmans, Maráthás, Vadars, Dheds, Sidis, Musalmáns, and a few Jains, Lingayáts, and Christians. The forest is fairly covered with trees. But they are smaller than in the Haliyál blocks, and, on account of the larger area under tillage and the greater population, forest fires are common.

Supa.

The Supa forests, none of which have yet been reserved, have an estimated area of 723 square miles,³ with a population of Maráthás, Shenvis, Sidis, Gaulis, Musalmáns, Christians, and in the east a few Havik Bráhmans. They are bounded on the north by the Bidi forests in Belgaum, on the east by Haliyál, on the south-east by the Kálinadi river, on the south by Kárwár, and on the west by Goa. Between Anshi on the Sahyádris and Sitávada on the Belgaum frontier, the Kárwár-Belgaum road divides the forests into two almost equal but widely different belts, a western and an eastern. The western belt, comprising the Sahyádris between Supa and Goa, includes the lands of forty-seven small villages with an area of about 350 square miles, and a population of about 12,500. The villages, and, except some hill sides allotted for

¹ Before the 1876 famine in one year 2,108,706 bamboos were sent from the Haliyál forests. Since 1875 the export of bamboos has averaged 1,326,145; in 1880-81 it was 1,282,874 and in 1881-82, 1,116,208. Large bamboos pay a fee of Rs. 3 the hundred, middle of Rs. 2, and small of Re. 1.

² The villages are: Arálvád, Mundaki, Madanhalli, Kervád, Bujrukh-Kanchinhalli, Mágvád, Málvád, Pála, Madalgeri, Sátmani, Javli, Harvalli, Kesarolli, Kurigadde, Haliyál, Guddápur, Hullatti, Bhánasgera, Jogankopp, Tatvani, Mundvád, Gadiyál, Dugginkeri, Dongrikopp, Mangalvád, Antroli, Tergaon, Murakvád, Ammankopp, Chibbalgeri, Teginhalli, Guttibail, Golihalli, Khámdalli, Malvád, Mugadkopp, Tippangeri, Karalhatti, Kumbhárkopp, Suddápur, Pur, Gundoli, Arashinageri, Kálginkopp, Chinaginkopp, Jattage, Doddakopp, Ajminháli, Janago, Khurd Kanchinhalli, Hampehalli, Kávalvád, Guladkopp, Nemdigadde, Belvatige, Adaki Hosur, Pándral Hosur, Jatage Hosur, Nilváni, Bukhankopp, Mavinkopp, Donshirgur, Doddashirgur, Bálshattikopp, Gobral, Ajgáon, Nirálge, Domgeri, Ágsalhatti, Kyátanageri, Kálginhatti, Baloga, Bidrahalli, Yedoga, Kálsápur, Channápur, Boblikopp, Halasi, Timmapur, Sátanhalli, Hunasivád, Nagshattikopp, Dusage, Chatranál, Alloli, Basavalli, Guttigeri, Hangi, Homanhalli, and Muttalmuri.

³ The area is doubtful as the sub-division has not yet been surveyed.

Chapter II.
Production.Forests.
Supa.

wood-ash or *kumri* tillage, the cultivation are in the valleys; the cultivation chiefly consisting of rice and *náchni* Eleusine corocana.

The country is hilly and much of it is bare iron-clay hill tops, slopes cleared for wood-ash tillage, and patches of shallow gravelly red soil with stunted ill-shaped trees. The view is redeemed from barrenness by some grand evergreen forests, crowded with lofty trees, and here and there in the nooks and ravines are considerable forests of leaf-shedding trees of good size and value.¹

Myrobalans and soapnut trees and the wild date are common. The chief evergreen forest trees are the *Artocarpus hirsuta*, *A. integrifolia*, and *A. Lakoocha*, the *Eugenia Jambolana*, the *Calophyllum Wightianum*, the *Myristica laurifolia*, the *Cinnamomum iners*, and the mango and wild sago-palm or *baini* *Caryota urens*.

Except for local use there is no demand for timber and no timber is cut. But the Marmagaum and Hubli railway is expected to open a large market in Goa and along the seaboard. There are few bamboos. Many of the hills are covered with *kórví* or *Strobilanthus* of several kinds, which, according to its kind, flowers and dries after three, five, or seven years, readily reproducing itself in the second season after seeding. The stems are much used in making wattled hut-walls, and so fond are bees of the flower that when it blooms honey farms double or treble in value. The minor sources of revenue are myrobalans, soapnuts, honey, cinnamon, and grass. Myrobalans, soapnuts, and grazing fees are collected departmentally; the right to gather honey and cinnamon is farmed. Since 1877 forest fires have become comparatively rare. The hill people earn good wages by gathering myrobalans and they do their best to stop fires by which many of the seedlings were formerly destroyed. Wood-ash or *kumri* tillage was formerly widespread, but it has gradually been reduced within harmless limits. In 1879-80 the area was 156 and in 1880-81 it was 273 acres.

The eastern belt of the Supa forests stretches from the Sahyádris in the north-west and the Kárvár-Belgaum road in the south-west as far east as the Haliyál border. It has an area of about 373 square miles, including the lands of fifty-six villages, with a population of 8867. Except part of the Sahyádris in the south-east, the country is less rough than the west belt. The scattered houses, the rice and sugarcane lands, and the betel and spice gardens, which cover perhaps a sixteenth of the whole area, are all in the valleys. In the west the country is open and the timber poor, but the rest, especially towards the south, is one grand forest, a mass of fine high timber, both leaf-shedding and evergreen. This area is divided into nine forest groups. In the extreme south-east Gund-Shivápúr with three villages and 40,000 acres; to the north of this Aurli-Mandorli with three villages and 9000 acres; again to the north the two joint

¹ The chief leaf-shedding trees are the *Terminalias*, *tomentosa*, *paniculata*, *Chebula*, *bellerica* and *Arjuna*; the *Lagerstromias*, *microcarpa* and *parvifolia*; *Xylia dolabriformis*; *Pterocarpus Marsupium*; *Cassia Fistula*; *Buchananias latifolia*; *Dalbergia latifolia*; the *Randias*, *dumetorum*, and *uliginosa*; the *Albizzias*, *Lebbek*, *odoratissima*, and *amara*; the *Eugenias*, *Jambolana* and *operculata*; and many of the *Ficus* class.

Chapter II.
Production.Forests.
Supa.

blocks of Bámáne-Birampáli and Maulinge-Bádgunđ with four villages and 18,000 acres; still to the north Kundapa-Donset with five villages and 12,800 acres; to the north-east Bidoli-Vadkal with nine villages and 33,000 acres; to the east Kodthalli-Holgadda with seven villages and 15,500 acres; to the east Kalsái-Usođe with ten villages and 49,800 acres; and in the extreme east Adangaum-Durgi with fifteen villages and 60,600 acres.

The Gund-Shivápur group, on the plateau above the Kálinadi river, in the extreme south-east includes the forest lands of three villages¹ with an estimated area of about 40,000 acres or 62·5 square miles and a population of about 450. The best part of this block are the great teak forests of Gund and the splendid evergreen forests of Shivápur. As the country is too rough for carts the timber has to be pushed and dragged by elephants down slips to the Kálinadi, and floated about sixty miles to the Kodibág wood-store near Kárwár.²

The teak logs vary in length from twenty-five to sixty feet and in contents from forty to 150 cubic feet. Felling and carrying charges amount at the Kodibág wood store to £4 (Rs. 40) the ton, and the selling price varies from £7 4s. to £14 (Rs. 72 - Rs. 140) the ton of fifty-two cubic feet. The Aurli-Mandorli group on the north side of the Káni river includes the forest lands of three villages,³ with an estimated area of 9000 acres or 14·06 square miles, and a population of 168. Acre for acre these forests are in no way inferior to the Gund block. A cart track has been made twenty-one miles to the Haliyál wood store and dead wood taken out, but no trees have been felled. Felling and carrying charges to the wood store amount to 10s. (Rs. 5) the *khandi* of 12½ cubic feet and the selling rates vary from £1 10s. to £2 (Rs. 15 - Rs. 20) the *khandi* for teak and from 16s. to £1 4s. (Rs. 8 - Rs. 12) for other timber. Close to the north of the Aurli forests are the Bámáne-Birampáli block to the south and the Maulinge-Bádgunđ block to the north of the Kálinadi. These blocks, including the lands of four villages, have an estimated area of about 18,000 acres or 28½ square miles and a population of about 270. Especially along the rivers, they contain immense quantities of splendid large teak and other valuable timber, the whole being open to carts. The timber finds its way about eighteen miles north-east to Haliyál at a cost of 9s. (Rs. 4½) the *khandi* of 12½ cubic feet and commands from £1 10s. to £2 10s. (Rs. 15 - Rs. 25) the *khandi* for teak and 16s. to £1 4s. (Rs. 8 - Rs. 12) for other timber. A good forest road runs right through the Bámáne-Birampáli group on the south of the Kálinadi, and a good cart track leads from the Supa-Haliyál forest road at Barchi to the Maulinge-Bádgunđ group to the north of the river.

The Kundape-Donset group, along the Katnal and Barchi to the north of the Maulinge-Bádgunđ forests, includes the lands of five villages⁴ with an estimated area of 12,800 acres or about twenty

¹ The villages are Gund, Shaváli, and Shivápur.

² In 1868 and 1869 Mr. H. Barrett, Deputy Conservator of Forests, made a road from a central point in the forests to the head of the Káni pass and from that a slip to the river. Other slips have been made by wood contractors.

³ The villages are Aurli, Hudse, and Mandorli.

⁴ The villages are Kundape, Hareguli, Shingergaum, Kundalgaum, and Donset.

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Production.Forests.
Supa.

square miles and a population of about 400. This is a first class teak forest which though steadily worked for the last sixteen years, still has much fine teak, blackwood, and other timber. It is easily reached from Haliyál at an average distance of fifteen miles. It is crossed by an excellent forest road with many branch cart tracks. At Haliyál the felling and carrying charges amount to 7s. (Rs. 3½) the *khandi* and the sale price varies from £1 10s. to £2 (Rs. 15-Rs. 20) for teak and from 16s. to £1 4s. (Rs. 8 - Rs. 12) for other timber.

The Bidoli-Vadkal group on the plateau above the Kálinadi comprises the forests of nine villages¹ with an estimated area of about 33,000 acres or 51·56 square miles and a population of 1067. Almost all the villages except Bidoli and Cháperi have a good deal of large teak, and several of them have splendid leaf-shedding woods, and magnificent tracts of evergreen forests covered with lofty trees of great girth.² The forests of this group have never been worked except to meet petty local wants. They can be reached both from above the Sahyádris and from the coast and will prove most valuable if the opening of the Marmagaum and Hubli railway causes a demand for wood. With slight improvements to the road any quantity of timber can be passed along the Ulavi-Kumbhárvádá road fifty miles to Sitávádá on the railway.

The Kodthalli-Holgadda group, along the Kálinadi and the neighbouring Sahyádrí slopes, includes the lands of seven villages³ with an approximate area of 15,500 acres or 24·21 square miles and a population of 366. This group has fine leaf-shedding forests with a good sprinkling of teak,⁴ some rich evergreen patches,⁵ and a nice teak plantation of 135 acres.⁶ The only outlet for this group is towards the coast. The logs are dragged to the Kálinadi by elephants, and are pushed about thirty-four miles down to the Kodibág wood store, on bamboo rafts, for few of these trees float. The felling, dragging, floating and stacking charges amount to £2 (Rs. 20) the ton of fifty-two cubic feet and the prices vary from £4 16s. to £8 (Rs. 48 - Rs. 80) in the case of teak and from £4 to £4 16s. (Rs. 40 - Rs. 48) for other timber.

The Kálsái-Usode block lies further inland than the Kodthalli-Holgadda group. It includes the forest lands of ten villages,⁷

¹ The villages are Bidoli, Cháperi, Kariyádi, Nandigadde, Bedasgadde, Chinch-khand, Yermukh, Ulavi, and Vadkal.

² The leaf-shedding-trees are the *Terminalias*, *tomentosa*, *Arjuna*, *paniculata*, and *bellerica*; the *Lagerstræmias*, *microcarpa* and *Reginæ*; *Xylia dolabriformis*; *Pterocarpus Marsupium*; *Dalbergia latifolia*; the *Albizzias*, *Lebbek*, *odoratissima* and *amara*; *Nauclea parvifolia* and *Adina cordifolia* are specially fine. The evergreen forests are specially fine in Kariyádi, Bhedasgadde, Hebbal, Yermukh, Ulavi and Vadkal. The chief trees are *Artocarpus*, *hirsuta*, *integrifolia*, and *Lakoocha*; *Calophyllum*, *elatum* and *Wightianum*; *Myristica*, *Jaurifolia* and *magnifica*; *Cinnamomum iners*; *Caryota urena*, and almost all the other varieties of evergreen Kánarese trees.

³ The villages are Kodthalli, Birkholi, Hebbal, Bobargadde, Suligeri, Tárimalá-pur, and Holgadde.

⁴ Splendid specimens of the *Terminalias*, *tomentosa*, *paniculata*, *bellerica*, and *Arjuna*; *Pterocarpus Marsupium*; *Lagerstræmia microcarpa* and *Adina cordifolia*.

⁵ Especially in Kodthalli, Birkholi, Hebbal, and Bobargadde.

⁶ Of the 135 acres seventy-five were planted in 1859 and sixty in 1880 and 1881.

⁷ The villages are Kálsái, Amboli, Gángoda, Poteli, Virnol, Nagri, Khodli, Konade, Ávade, and Usode.

Chapter II.
Production.

Forests.
Supa.

with an approximate area of 49,800 acres or 77.84 square miles and a population of 4587. There is little teak but there are fine mixed leaf-shedding woods and especially in Kálsái good patches of evergreen forest. Except in 1865-66 in Usode these forests have been used only to meet local demands. All parts of them can be reached by carts, but their timber will not be wanted unless the Goa-Hubli railway raises a brisk demand.

The Adangaum-Durgi block, in the extreme east as far as the Anshi-Sitávada road, includes the forest lands of fifteen villages,¹ with an approximate area of 60,600 acres or 94.71 square miles and a population of 1559. Though as a rule thin, these forests have some fine large trees, mostly leaf-shedding with several scattered evergreen patches. Except for local wants they have never been worked. The minor products are soapnuts, honey, grass, and myrobalans especially in the west.

Wood-ash or *kumri* tillage was formerly common, but it has been stopped except in a few villages to the south. In the west fires are put down for the sake of the myrobalans and in the east the denseness of the forests prevents fires from being as common as in Haliyál. The evergreen patches are always free from fire. Bamboos seeded all over Supa in 1866-67 and in most places the young crop is fit for use.

Kárwár.

The Kárwár forest area is bounded on the north by Goa and Supa, on the east by Yellápur, on the south by Ankola, and on the west by the tilled lowlands between the hills and the Arabian Sea. The forests include the lands of fifty villages with a measured area of 137,246 acres or 214.44 square miles and a population of about 37,000, chiefly Halepaiks, Komárpaiks, Maráthás, Bhandáris, Padtis, Musalmáns, and a few Shenvi Bráhmans and Christians. The forest area was carefully examined in 1876 by Mr. E. J. Ebdon, C.S., and divided into 86,269 acres of reserved and 50,977 acres of protected forests. But the whole has since (1879) been declared reserved forest.² Wood-ash tillage was formerly widespread but the area is now insignificant.³

The hill tops, slopes, and many of the Kárwár valleys are covered with a more or less dense forest growth. The best forests are on the slopes and in the dells facing the Kálinadi, from the meeting of the Kátar and Bhaire boundaries about twenty miles east to the meeting of the Supa and Yellápur boundaries. The rest of the forests lie to the west of this tract along the Kálinadi about twelve miles to the sea. Most of the forests are of leaf-shedding trees with considerable evergreen patches in ravines and near villages, and much scattered dense scrub which, since wood-ash tillage has been stopped, is fast turning into forest. The Kárwár forests may be divided into four blocks, two in the eastern or better belt, the Devkár-Devalmakhi group with nine villages and 48,000 acres to the south of the Kálinadi, and the Balemani-Bhaire group with seven villages and 45,000 acres to the north of the river; and two in the

¹ The villages are Adangaum, Chápoli, Karambal, Timboli, Ámset, Vaijgaum, Karandi, Puseli, Konade, Bámanávdi, Velipkumbeli, Kumbál, Mirási-Kumbeli, Málambe, and Durgi.

² Government Gazette, 6th March 1879.

³ In 1879-80 forty acres, in 1880-81 twenty-nine acres.

western or poorer forest belt, the Khervádi-Kodibág group with twenty-one villages and 29,000 acres on the south, and the Alge-Mudgeri group with thirteen villages and 13,400 acres on the north of the Kálinadi.

The Devkár-Devalmakhi group on the south of the Kálinadi includes the forest lands of nine villages,¹ with an area of 48,631 acres or 75.98 square miles, and a population of about 2400. The evergreen trees and the leaf-shedding trees, except that the *dindal* *Anogeissus latifolia* does not occur and that the *khair* *Acacia Catechu* is common, are the same as those in Supa and Haliyál, only not so large. There is a considerable quantity of second and third class teak. The Bálemaní-Bhaire group on the north of the Kálinadi includes the forest lands of seven villages² with an area of 45,799 acres or 71.56 square miles and a population of 1917. Its forests closely resemble those of the Devkár-Devalmakhi group to the south of the river. Both groups have been worked for many years and most of the large timber has been sent to the Kodibág timber store, an average distance of about twenty-five miles. The felling, carrying and stacking charges vary from 4s. to 10s. (Rs. 2 - Rs. 5) the *khandi* of twelve and a half cubic feet, and the price fetched varies from £1 to £1 10s. (Rs. 10 - Rs. 15) for teak and from 14s. to £1 (Rs. 7 - Rs. 10) for other timber. In the west or poorer forest tract the Khervádi-Kodibág group on the south of the Kálinadi includes the forest lands of twenty-one villages,³ with an area of 29,382 acres or 45.91 square miles, and a population of 21,557; and the Alge-Mudgeri group on the north of the river including the forest lands of thirteen villages,⁴ with an area of 13,434 acres or 20.99 square miles, and a population of 11,108. These two groups are closely alike. Though the forests are much thinner than those higher up the river, they contain much useful wood for making field tools and burning. There is a great demand from the thickly-peopled coast villages, and no timber is cut in either group except to meet the local demand. The forests of seven villages close to Kárwár,⁵ which were stripped of their wood when the port and town of Kárwár (1865) were established, have since been strictly protected and are now covered with young trees. Bamboos, which were formerly abundant, seeded some ten years ago, and the young crop is not yet fit for use. The minor products of the Kárwár forests are myrobalans and soapnuts, which are gathered by the forest department, and catechu, honey, and cinnamon which are farmed.

In the central division come the Yellápur, Mundgod, Kumta, and Ankola forests. The Yellápur forests are bounded on the north by the Kálinadi and Kalghatgi in Dhárwár; on the east by the Bedti

Chapter II: Production.

Forests.
Kárwár:

Yellápur.

¹ The villages are Devkár, Kaiga, Hartuge, Kuchekár, Viráje, Mallápur, Sirve, Nagekuve, and Devalmakhi.

² The villages are Bálemaní, Kadra, Gottagáli, Lándé, Kámargaum, Goyar, and Bhaire.

³ The villages are Khervádi, Kátar, Kadiye, Naiti, Mailváda, Siddar, Kinnar, Kadvád, Bárgal, Belur, Nivali, Todur, Amadalli, Kodár, Chandiyé, Arge, Binage, Sirvád, Bád, Baithkol, and Kodibág.

⁴ The villages are Alge, Hankon, Madheváda, Kánasgeri, Májáll, Ghádsái, Gopsitta, Hottegáli, Mainjini, Sávantváda, Kolge, Á'ray, and Mudgeri.

⁵ The villages are Chendiye, Arge, Binage, Shirvád, Kadvád, Bád and Baithkol.

Chapter II.

Production.

Forests.

Yellápur.

which separates Yellápur from Mundgod and Sirsi ; on the south by Ankola and Kárwár ; and on the west by part of Kárwár and the Kálinadi river. The forests, none of which have been reserved, include the lands of seventy-nine villages with an area of 222,727 acres,¹ or 348 square miles and a population of about 15,600. The Haliyál-Kárwár road which runs north and south and the Mundgod-Katgeganeshgudi road which runs east and west divide the Yellápur forests into four blocks with clear and well marked limits. These blocks are Lálguli-Sistmudi in the north-west with fifteen villages and 46,500 acres ; Kánigeri-Kondemani in the north-east with eight villages and 61,500 acres ; Heggápur-Subgeri in the south-east with twenty-four villages and 47,300 acres, and Sigepál-Jogalepál in the south-west with thirty-two villages and 67,500 acres. The forests of the northern groups are chiefly of leaf-shedding and those of the southern groups chiefly of evergreen trees. They have much teak, bamboo, and fine timber of splendid size and exceeding value to the people of the great bare country to the east and north. In the south, the slopes and tops of the Sahyádris are clothed with the most splendid evergreen forests. In some of the rich valleys and dells are cocoa-palm groves and spice and betel gardens, each with its belt of stripped and pollarded forest. Except close to the Sahyádris ridges all Yellápur forests are open to carts. From the eastern slopes and uplands the timber passes inland, and from the western slopes it is dragged and floated down the Gangávali and Kálinadi rivers. The Lálguli-Sistmudi block in the north-west is bounded on the north by the Kálinadi river, on the east and south by the Haliyál-Katgeganeshgudi road, and on the west by the Kálinadi. It includes the forest lands of fifteen villages² with an area of 46,473 acres and a population of 4743, mostly Maráthás or Kunbis, Christians, Sidis, and a few Havik Bráhmans. Nearly the whole area is splendid mixed forest and over the greater part of it there is much teak. In the eight first named villages the teak is of superb growth, seventy to eighty feet to the first bough, and yielding logs thirty to sixty feet long with 100 to 175 cubic feet of solid timber. Especially in Angod there are large tracts of first class evergreen forest³ with magnificent *bakul*, *toon*, and *angeli* trees ninety to 100 feet to the first bough, crowned by fifty or sixty feet of branches, and yielding 150 to 225 cubic feet of timber. Bamboos of several useful kinds grow freely mixed with the trees.⁴ The large bamboos

¹ This is the revenue survey estimate ; the former estimate was 233,140 acres.

² The villages are Lálguli, Gotguli, Hukali, Baragadde, Nágarkán, Dehalli, Besgod, Katgeganeshgudi, Angod, Gerál, Sávgadde, Kanadgál, Belgeri, Yellápur, and Sistmudi.

³ The finest evergreen trees are *angeli*, *Artocarpus hirsuta* ; jack or *phanas*, *Artocarpus integrifolia* ; *devdári*, *Cedrela Toona* ; *kempa* or red *devdári*, *Chickrasia tabularis* ; *bakul*, *Mimusops Elengi* ; *balge*, *Vitex altissima* ; *babbi*, *Calophyllum Wightianum* ; *neladri*, *Alseodaphne semicarpifolia* ; *jambul*, *Eugenia Jambolana*, and *baini* or sago-palm, *Caryota urens*.

⁴ The chief leaf-shedding timber trees are teak or *edgádn*, *Tectona grandis* ; *matti*, *Terminalia tomentosa* ; *nandi*, *Lagerstroemia microcarpa*, *heddi*, *Adina cordifolia* ; and *jámba*, *Xylia dolabriformis* ; also, but sparingly, *shisham*, *Dalbergia latifolia* ; *kindal*, *Terminalia paniculata* ; *gotting*, *Terminalia bellerica* ; *dhámin*, *Grewia tilicefolia* ; *honi*, *Pterocarpus Marsupium* ; *kumbia*, *Careya arborea* ; *holematti*, *Terminalia Arjuna* ; *dindal*, *Anogeissus latifolia* ; *kalumba*, *Nauclea parvifolia*, and *belati*, *Albizia procera*.

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and in 1868 and the new crop is nearly ready for use; the large-sized bamboos seeded in 1874 and in three years will prove a good crop. Though most of the forests of this group have been cleared during the last sixteen years, they have still vast stores, of good mature timber. The teak of the Kálinadi slopes goes by rail to the Kodibág wood store. From above the crests of the Kálinadi slopes the produce passes east to the Kannigeri saw mills, four miles and a half north of Yellápur. During the last twelve years about 1927 trees or an yearly average of 160 have been felled and removed from these forests. The felling and carrying charges to the Kodibág store amount to £4 (Rs.40) a ton of fifty-two cubic feet and to Yellápur and the saw mills to £1 or £1 4s. (Rs.10-Rs.12) the ton. The sale price at Kodibág varies from £7 4s. to £14 (Rs.72-Rs.140) the ton; at Yellápur from £6 to £8 (Rs.60-Rs.80) the ton; and at the saw mills from 3s. 6d. to 5s. (Rs.1½-Rs.2½) the cubic foot sawn into scantlings and planks. The cheaper kinds of timber do not bear the cost of carriage to the coast. They are sent to Yellápur and sold at prices varying from £3 4s. to £4 16s. (Rs.32-Rs.48) the ton and at the saw mills at 1s. 6d. to 3s. (Rs.12-Rs.1½) the cubic foot.

The Kannigeri-Kondemani block in the north-east of Yellápur is bounded on the north and east by the Tattihalla river, a part of Kalghatgi in Dhárwár, and the Bedti river. It includes the lands of eight villages¹ with an area of 61,500 acres and a population of 1739, mostly Maráthá Kunbis, Dhangar-Gavlis, Christians, and a few Sidis. Most of it is fine high mixed forest with much teak except in Sashrahalli and Kondemani. The best parts of the group are near the west from Kannigeri to the Tattihalla river and thence east to Kalghatgi where the trees are smaller. Again starting from near Kirvatti south along and back from the Bedti river, very fine forests stretch right to the road between the Bedti bridge and Yellápur. The trees are the same as in the Lálguli-Sistmudi group, only there are more and finer *honis* *Pterocarpus* *Marsupium*, *dindals* *Anogeissus latifolia*, and *belátis* *Albizzia* *procera*. The few small patches of evergreen forests in the south are of little value. A splendid crop of the large bamboo which seeded in 1868 is ripe in some favoured spots and in two years will be fit for use. Some of the timber of this group goes to the Kannigeri saw mills and some to the Yellápur and Kirvatti stores. The felling and carrying charges and the sale prices are the same as in the Lálguli-Sistmudi group. About 39,000 trees have been felled and removed from these forests, but they still abound in vast stores of the finest timber.

The Heggápur-Sabgeri group, in the south-east, is bounded on the east and south by the Bedti, on the west by the Arbail-Yellápur road, and on the north by the Yellápur-Mundgod road as far east as the Bedti bridge. It includes the lands of twenty-four villages²

¹ The villages are Kannigeri, Kanchinhalli, Kirvatti, Hosalli, Madnur, Kolikeri, Sashrahalli, and Kondemani.

² The villages are Heggápur, Kalsur, Hutkhand, Somanhalli, Chandguli, Malal, Magod, Hegumbli, Dabbguli, Devargadde, Holemadu, Belkhand, Sulgar, and 1218-6

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with an area of 47,316 acres and a population of 2976, mostly *Bráhmans*, *Maráthás*, and a few *Sidis* and *Sonárs*. The forests of this group are splendid, crowded with lofty leaf-shedding evergreen trees. The whole is almost equally valuable except the tracts near and a few miles south of Yellápur and some plots a short distance back from the crests of the *Sahyádris* which in past times were cleared for grazing or wood-ash tillage. Their nearness to Yellápur and their easy communication with Mundgod and Sirsi give a special value to the fine mixed high forests of Kalsur, Somanhalli, Heggápur, Chandguli, and Malálgaum along the Bedti river. Except a few evergreen patches these are chiefly leaf-shedding forests with excellent large teak and besides the trees already mentioned (*p.* 40) *honi*, *matti*, *kindal*, *nandi*, *shesham*, and *belati*. As in the *Kannigeri-Kondimani* group, a splendid crop of young bamboos will be fit for use in two years. Next in value to these leaf-shedding forests are the splendid evergreen tracts of Mágod, Hegumbli, Dabguli, Devargadde, Sulgár, Hulgán, Komadi, and Balekhani. In these all the evergreen trees already mentioned except the *Calophyllum elatum* are found in plenty and of great size. Besides evergreens the Mágod and Hegumbli forests have a good deal of teak and much very large *Terminalia tomentosa* and *Lagerstrœmia microcarpa*. These forests are easy to work. Elephants drag the timber to the Bedti river down which it is floated thirty-five miles to the Gangávali timber store. The large bamboos seeded in 1866-67, and the young crop has been in use for the last two years. The remaining forests are back from the *Sahyádris* and between them and Yellápur. They have no teak, but splendid evergreen trees, and a good deal of *matti*, *kindal*, *nandi*, and *jamba*. They have never been worked except to meet local wants. The large bamboos seeded in 1868 and are again nearly fit for use, but the crop is not so good as in other parts.

The Shigepál-Jogalepál group in the south-west is bounded on the north by the Katganesbgudi-Yellápur road, on the east by the Yellápur-Arbail road, on the south by Ankola, and on the west by the Kálinadi river and Kárwár. It includes the forests of thirty-two villages¹ with an area of 67,485 acres and a population of about 6200, mostly *Havik Bráhmans*, *Maráthas*, *Christians*, and a few *Sidis*. The best forests are those of Arbail, Gullápur, Kodlagadde, Ambgaum, Vajrahalli, Honagadde, Targár, Bigár, Kalche, Kodsalli, and Barballi, which join and together fill the upper and lower *Sahyádris* slopes. The leaf-shedding and evergreen forests share the hill sides and rival each other in excellence. Teak is plentiful on the lower slopes. It is not easily carried to the inland wood-stores, but from Arbail, Gullápur, Kodlagadde and Ambgaum it can readily be dragged to the Bedti and floated to the Gangávali wood store.

Analgar, Nandolli, Komadi, Hulgán, Balekhani, Jogadmane, Hastkargadde, Gopadmane, Hitlalkargadde, Kandikeri, and Sabgeri.

¹The villages are Shigepál, Tatgár, Huttakmane, Hirigál, Lingadbail, Donagá, Bálginmane, Gharvás, Idgundi, Haunsangadde, Balgár, Barballi, Báginkat, Chimanhalli, Telangeri, Arbail, Gullápur, Kodlagadde, Ambgaum, Honagad, Vajrahalli, Targár, Bigár, Kodsalli, Kalche, Marhalli, Kánur, Bäre, Mávinm, Benadguli, Chikkumane, and Jogalepál.

produce of the other forests is easily floated down the Kálinadi to Bidág. Teak and other first-class woods return a good profit when sent by the Kálinadi or Bedti-Gangávali rivers. Besides these there is an immense quantity of grand *matti*, *kindal*, *Arjuna*, *Bandi*, a good deal of it available for inland use. The evergreen forests on the upper slopes are crowded with lofty trees of the usual evergreen varieties.¹ Among them the *murgalmara* *Garcinia purpurea* is very common and highly valued for its acid pleasant fruit, and *kokam* oil. The bamboos seeded in 1866-67, and the young crop has been fit for use since 1879. Next to the south are the forest tracts of Mávinmane, Benadguli, Marhalli, Báre, and Kánur. Except some patches of evergreen in the upper slopes and some fine timber in the lowest slopes, these forests have been spoiled by wood-ash tillage.²

Besides the forests of this group already described, those of Hirigál, Balgár, Báginkatte, Chimanhalli, and Tellangeri are worthy of note for their splendid evergreen timber which has the special value of being not more than ten miles from the Yellápur store. The less wooded tracts between Yellápur and the great Sahyádrí forests contain fair but not very valuable timber. The bamboos of the forests near Yellápur seeded in 1868-69, but except in a few choice spots, the young crop is not yet fit for use.

The minor products of the Yellápur forests are myrobalans, soapnuts, honey, cinnamon, wild pepper, grass, and canes. Myrobalans and the small crop of soapnuts are gathered by the forest department; cinnamon honey and wild pepper are farmed; grass and canes may be cut free of charge for local use, but a yearly fee of 3*d.* (2 *ans.*) a head is levied on all cattle grazing in forest reserves. Before the 1876 famine the largest recorded export of bamboos was 183,599. During the famine year it fell to 44,943. It has again risen from 93,825 in 1879-80 to 116,200 in 1880-81, and to 484,700 in 1881-82. The export fee is the same as in Haliyál 6*s.* (Rs. 3) the hundred for large bamboos, 4*s.* (Rs. 2) the hundred for middle-sized bamboos, and 2*s.* (Re. 1) the hundred for small bamboos. During the last few years forest fires have been fairly kept down.

The Mundgod forests are bounded on the north by the Bedti river, on the east by Bankápur and Hángal in Dhárwár, on the south by Sirsi, and on the west by the Bedti river. The forest includes the lands of ninety-one villages with an area of 103,599 acres, of which 35,295 are reserved and 68,304 are protected,³ and a population of about 15,800. They are divided into five groups, two in the west with reserved forests, and three in the east where no forests have been reserved. The two western blocks are Yerebail-Ráyanhalli in the north-west with seven villages and 34,650 acres, and Chikka-Havalli-Halharvi in the south-west with eight villages and 10,900 acres. The three eastern blocks are Hulihond-Kusur in the north-east with twelve villages and 14,700 acres, Hire-Bachanki-Nyásargi in the east with thirty-one

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Mundgod,

¹ See above p. 40.

² This has been reduced to 127 acres in 1880 and 125 acres in 1881.

³ Government Resolution 5569, 20th October 1880.

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Mundgod.

villages and 24,300 acres, and Hanmápur-Boranágudi in the south-east with thirty-three villages and 19,000 acres. The Yer Ráyanhalli group, mostly along and back from the Bedd, includes the lands of seven villages¹ with an area of 34,655 acres, of which 29,245 are reserved and 5410 protected, and a population of 869, mostly Marátha-Kunbis, Vadars, Dhangar-Gavlis, and Christian Sidis. Most of this area is high mixed forest with good teak and the other varieties of leaf-shedding trees given under Yellápur. Besides these forests grassy glades occur here and there with *gela* *Randia dumetorum* and *pendri* *Randia uliginosa* bushes. These glades were cleared by the cattle-keeping Dhangar-Gavlis who formerly infested these forests and lived alternately between them and Maisur. There is an abundant supply of the three kinds of useful bamboos. The large bamboo seeded in 1868-69 and the young crop is not yet fit for use. These forests have been sparingly worked for the last twenty years. They still contain large quantities of teak and other useful timber. The produce is taken either twelve miles west to Yellápur or about the same distance east to Mundgod. Felling and carrying charges come to £1 5s. (Rs. 12½) the ton of fifty-two cubic feet and the sale price varies from £4 16s. to £6 8s. (Rs. 48 - Rs. 64) for teak and from £3 4s. to £4 (Rs. 32 - Rs. 40) for other timber. This group has no evergreen forests.

The Chikka-Harvalli-Hálharvi group in the south-west includes the lands of eight villages² with an area of 10,964 acres, of which 6050 are reserved and 4914 protected, and a population of 458, chiefly Maráthás, Lingáyats, Vadars, Dhangar-Gavlis, and a few Dravid Bráhmans. This group is well stocked with teak and other fine timber. It has been worked for the last sixteen years. At the Singanhalli wood store about nine miles from the forests, felling and carrying charges amount to £1 0s. 6d. (Rs. 10½) the ton of fifty-two cubic feet. The sale price varies from £6 to £10 (Rs. 60 - Rs. 100) for teak and from £4 to £10 (Rs. 40 - Rs. 100) for other timber. The *honi* grows to a remarkable size in these forests, and is a great favourite in Dhárwár, often fetching as high a price as the best teak. To the large evergreen forest at Kurli wild elephants used to come from Soráb in Maisur. Their last visit was in 1868. This Kurli forest has *baini* *Caryota urens* or sago-palm and the usual lofty varieties of evergreen trees. Bamboos abound. The large bamboo seeded in 1868-69 and the young crop is not yet fit for use. The forests in the east of Mundgod stretching from Hulihond north to Yamgalli near Badangod in Sirsi are thin but valuable for their teak and sandalwood. They are all protected and are divided into three groups: Hulihond-Kusur in the north, Hire-Bachanki-Nyásargi in the centre, and Hanmápur-Boranágudi in the south. The Hulihond-Kusur group in the north-east includes the lands of twelve villages³ with an area of 14,718 acres and

¹ The villages are Yerebail, Bálehalli, Gunjávati, Mainhalli, Belaginhalli, Kalkeri, and Ráyanhalli.

² The villages are Chikka-Harvalli, Dodda-Harvalli, Attanagi, Rámápur, Kodambi, Bomarshikop, Kurli and Hálharvi.

³ The villages are Hulihond, Nandikatti, Agadi, Hunagund, Attiveri, Vadagatti, Arshinageri, Majjigeri, Indur, Kop, Ugginkeri, and Kusur.

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Mundgod.

population of about 3700, mostly Dravid Brāhmans, Lingáyats, Musalmáns, Maráthás, Buruds, and Vadars. The forests are very except in Ugginkeri, Hulihond, and part of Nandikatti, which are well stocked with trees of fair growth, chiefly teak, *matti*, *kindal*, *shisham*, and *dindal*. There is also much sandalwood *gandha Santalum* and large quantities of bamboos. The large bamboo seeded in 1872-73 and the young crop is not yet fit for use. The forests of this group have not been worked for profit and timber has been cut only to meet local wants. As the sandalwood matures, it is gathered and sent to Sirsi where the felling and carrying charges come to from 16s. to £1 (Rs. 8-Rs. 10) and the sale price varies from £12 to £13 (Rs. 120-Rs. 130) the *khandi* of 560 pounds. The Hire-Bachanki-Nyásargi group occupies both sides of the road between Sirsi and Mundgod from a little north of Mundgod to the Singanhalli wood store. It includes the lands of thirty-one villages with an area of 24,298 acres and a population of 5730, mostly Dravid Brāhmans, Lingáyats, Maráthás, Vadars, Buruds, and Musalmáns.¹ Though as a rule thin, most of the forests have here and there a promising growth of young teak, *matti*, *kindal*, *dindal*, *shisham*, and sandalwood at certain favoured places near streams where the soil and shelter are good. Bamboos of three kinds are found but not to the same extent or so well grown as in the cooler west. The large bamboo seeded in 1872-73 and the young crop is not yet fit for use. Some cuttings begun in 1879 are still going on in the Sanavalli forests, where old and fire-damaged trees are being cut and worked into field-tools. These field-tools are in great demand and sell at 3d. to 1s. (ans. 2-8) each, people coming fifty or sixty miles from parts of Dhárvár and taking cart-loads.

The Hanmápur-Boranágudi group in the south-east occupies both sides of the Sirsi-Mundgod road from the Singanhalli wood store to near Badangod in Sirsi. It includes the forest lands of thirty-three villages with an area of 18,965 acres and a population of 5055, mostly Dravid Brāhmans, Lingáyats, Maráthás, Vadars, Musalmáns, and Buruds.² The forests are much the same as those of the Hire-Bachanki-Nyásargi group, only that there is less teak and *dindal* and more *muttal Butea frondosa*. Jambekop, Siddápur, Jalgeri, Naginkeri, Bikod, Kalebail, Janageri, and Hallikop are also much heavier-wooded than the general run of frontier lands, and in Hallikop there is a fair-sized evergreen forest with numerous lofty trees. This patch of evergreen forest used to be visited by wild elephants from Maisur. The forests of this group have not been worked. Only sandalwood as it matures is gathered and sent to Sirsi. Bamboos of three useful

¹ The villages are Hire-Bachanki, Pura, Tattihalli, Teginkop, Tamyánpok, Karguli, Chavdalli, Kalgankop, Malvalli, Lakolli, Tumbargi, Andalgi, Kalbhalli, Hirehalli, Mávkop, Kávalkop, Allihalli, Mundsáli, Kanvi-kátur, Chigalli, Hoskop, Sólgañi, Ajjihalli, Bapalkatti, Bapalgundi, Sanavalli, Kargankop, Malgankop, Kundargi, Mundgod, and Nyásargi.

² The villages are Hanmápur, Nágnur, Kátur, Shinganhalli, Margadi, Hulihond, Borangguñde, Voralgi, Hudelkop, Bhadrápur, Pála, Ingaldi, Kalkop, Kadabgeri, Ghotgadi, Kop, Hallikop, Jambekop, Siddápur, Kolgi, Malgi, Jalgeri, Nagiukeri, Bikod, Kalebail, Janageri, Guagsur, Andebail, Harganhalli, Virápur, Kyádikop, Yemagalli, and Boranágudi.

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kinds are met with, but in abundance only in the west. The large bamboo seeded in 1872-73 and the young crop is not yet for use.

The minor products of the Mundgod forests are honey and g. There are very few myrobalans or soapnuts. The honey far sold yearly. Grass may be cut free; but cattle grazed in the reserve pay a yearly head-fee of 3*d.* (2 *annas*). Before the 1876 famine the largest recorded export of bamboos was 282,501, in 1876 the number fell to 114,792, in 1879-80 it was as high as 376,062, but in 1880-81 it again fell to 272,496. The export fee is the same as in other sub-divisions.¹ Fires are very common. Many if not most are wilful, the people firing the forests either to increase the quantity of dead wood, or in pursuit of game.

Ankola.

The Ankola forests are bounded on the north by Kárwár and Yellápur; on the east by Sirsi and Kumta; on the south by Kumta; and on the west by the Arabian Sea. They include the lands of eighty-two villages and have a measured area of 183,715 acres or 287.05 square miles, of which 82,060 acres or 128.21 square miles are reserved and 101,655 acres or 158.84 square miles are protected.² The chief forests classes, who number about 33,800, are Halepaiks, Hálvakki-Vakkals, Havik Bráhmans, Nádigars, Karivakkals, Musalmáns, and a few Christians. The country is hilly. Along the north and north-west the forests on the hill tops and higher slopes have suffered severely from wood-ash tillage, but the lower slopes, the dells, and the Gangávali valleys are well wooded. Splendid high mixed forests stretch up the Gangávali valley and in the neighbouring hills from near Agsur to the border of Yellápur and Sirsi. The forests may be divided into five groups: three in the richer eastern tract, Kuntguni-Brahmur in the extreme south-east, with twenty-one villages and 26,880 acres; Shávkár-Shirguni in the south-east, with eleven villages and 48,375 acres; and Kodlagadde-Hebbul in the east, with five villages and 29,670 acres; and two in the barer west, Heggármakigadde-Gule in the north-west, with nineteen villages and 54,400 acres; and Agsur-Shettikeri in the west, with twenty-six villages and 24,400 acres. The Kuntguni-Brahmur group in the extreme south-east is a splendid block of forests lying immediately below the Vaddi pass and between its crest and the Gangávali river. It runs about six miles along the Sahyádris with an average breadth of about seven miles or an area of about forty-two square miles, all reserved. It includes the forest lands of twenty-one villages³ with a population of about 7450 mostly Hávik Bráhmans, Maráthás, Hálvakki-Vakkals, Mukáris, Nádigars, Ambigars, Musalmáns, and a few Christians.

The forests along the Sahyádris are mostly evergreen. Though marred by former wood-ash tillage they have some splendid trees. Below the Sahyádris and towards the Gangávali, many parts of the leaf-shedding forests are very fine, with magnificent *matti*, *kindal*,

¹ See above p. 43.

² *Government Gazette*, 28th October 1880.

³ The villages are Kuntguni, Gundabála, Morahalli, Mogata, Andle, Kárbail, Balále, Takatgeri, Kenkane-Shivápur, Mulvari, Devigadde, Sagadgeri, Kámage, Adigon, Agrágon, Hegre, Jug, Angadibail, Manigadde, Kabgál, and Brahmur.

ri, nandi, heddi, ságdi, jámba, and khair in the south. This group has never been worked. It was formerly in Kumta and was transferred to Ankola in 1880.¹

The Shávkár-Shirguni group to the north of the last group has also good timber. It includes the lands of eleven villages² with an area of 48,375 acres, of which 31,684 are reserved and 16,691 are protected, and a population of 2518. Good sized teak is found sparingly over the higher ground. The chief and largest trees are the *Terminalias*, *tomentosa*, *paniculata*, and *Arjuna*; *Lagerstrœmia microcarpa*, *Terocarpus Marsupium*, *Adina cordifolia*, *Xylia dolabriformis*, and *Schleichera trijuga*. Fine patches of evergreen forest, notably near the Mushki pass, are also found along the hills and in the ravines, with all the usual varieties of evergreen trees. Fine canes and palms are also abundant. Formerly much timber used to be cut and sent to the coast, but for more than sixteen years, except that dead wood has been taken from them, these forests have had rest.

The Kodlagadde-Hebbul group to the north of the Gangávali includes the lands of five villages,³ with an area of 29,671 acres, of which 22,114 are reserved and 7557 are protected, and a population of 1213. The trees are the same and are equally well grown with those of the Shávkár-Shirguni group. There is a good deal of fair sized teak, and evergreen patches are common along the hills and in the ravines. The *Calophyllum elatum* or Poonspar is not found. In 1878-79 about 800 tons of teak and other timber were cut and sent to the Gangávali wood store. Since then, except for dead wood cuttings these forests have had rest. The felling and carrying charges amounted to £2 4s. (Rs. 22) the ton of fifty-two cubic feet, and the sale price varied for teak from £4 16s. to £6 8s. (Rs. 48-Rs. 64), and for other timber from £3 4s. to £4 16s. (Rs. 32-Rs. 48) a ton. In the protected forests of Kattinhakla and Kaulalli arrangements were made at the time of the survey settlement for a yearly grant of 13 $\frac{1}{2}$ acres for wood-ash tillage. To meet this 139 $\frac{1}{4}$ acres of thick scrub have been marked off, and to this the wood-ash tillage is to be confined. The other less important forests to the north of the Gangávali are divided into two almost equal parts by the range of hills that runs from Agsur to the coast at Algeri. To the north of this ridge, the Heggármakigadde-Gule group includes nineteen villages⁴ with an area of 54,401 acres of which 28,262 are reserved and 26,139 protected. The population numbers about 5600. These forests have greatly suffered from wood-ash tillage, all the hill tops and higher slopes having been left bare or covered with close scrub. In the dells are some scattered patches of forests and along both sides of the Avarsa which rises on the Sikli-Turli,

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Forests.
Ankola.

¹ Government Notification 6535, 10th December 1880.

² The villages are Shávkár, Heggár, Dorangera, Kallashvar-Sirasgaum, Kakali, Halvalli, Muski, Dongri, Hillur, Kammáni, and Shirguni.

³ The villages are Kodlagadde, Sunksal, Kattinhakla, Kaulalli and Hebbul.

⁴ The villages are Heggármakigadde, Kanchimale, Marrugadde, Shevegule, Sikli-Turli, Kendije, Lakkeguli, Malláni, Heggarni-Kotebhávi, Nellur-Kunchibail, Berde, Algeri, Hattikeri, Belikeri, Avarsa, Hárvád, Sakalben, Varilben, and Gule.

Chapter II.

Production.

Forests.

Ankola.

Sheveguli, and Kendije hills are tracts of fairly high forest. Some evergreen patches have also escaped the axe of the wood-ash tillage. These forests have not been worked for profit. Except some demand for wood for poles and firewood no timber has been cut. The forests are the same as in other parts of Ankola, only they are smaller. *Khair* is the prevailing tree all over the lower lands towards the coast. It is extremely valuable and has been strictly protected since 1873. At the time of the forest settlement a yearly grant of 217 $\frac{3}{4}$ acres for wood-ash tillage was made in the protected forests of Shevegule; Mallani, Kendije, Lakkeguli, Sikli-Turli, Hegarni-Kotebhavi, and Kanchimala. To meet this grant 1810 acres of dense scrub were marked off, and to this area wood-ash tillage is now restricted.

The Agsur-Shetikeri group to the south of the Algeri hills includes the lands of twenty-six villages¹ with an area of 24,388 acres of protected forest and a population of 9635. These forests have suffered so severely from wood-ash tillage that the hill-sides are covered with a dense mass of thorny scrub instead of with forest. Over the lower lands also the forests are thin and poor. The trees are the same as in the Heggármakigadde-Gule group to the north of the Algeri hills, only they are still smaller and patches of evergreen are rarer. The prevailing tree is the valuable *khair* *Acacia Catechu*, and this since 1873 has been strictly protected with the best results. These forests are not worked for profit and no timber is cut except to meet local wants. Wood-ash tillage has been completely stopped. The bamboo which is found in large quantities, seeded in different parts of Ankola between 1868 and 1875. The new crop promises well, but is not yet fit for use.

The minor products are myrobalans, soapnuts, honey, cinnamon, catechu, grass, and canes. Myrobalans and soapnuts are gathered by the Forest Department; the others, except the canes which are free and much used for baskets, are farmed.

Kumta.

The Kumta forests are bounded on the north by Ankola, on the east by Sirsi and part of Siddápur, on the south by Honávar and part of Siddápur, and on the west by the Arabian Sea. The forests include the waste and forest lands of 109 villages with an estimated area of about 260 square miles of forest and with a population of about 31,300. None of it has yet been marked off as reserved.

The forests lie between the water-shed of the Sahyádris and the sea. Except some heavy evergreen forests along the Sahyádris, which either traditional sacredness or the size of the timber protected from the axe of the wood-ash cultivator, and in some valleys and dells, the forests have everywhere suffered severely. Still in favourable places sixteen years of protection have done much to change dense scrub into young forest. On the lower slopes and parts nearer cultivation the better kinds of trees have been replaced

¹ The villages are Agsur, Adlur, Navgadda, Sirkuli, Boleguli, Bagribail, Shedgeri, Hosgadda, Vandige, Bole, Talgadda, Sirgunji, Vasarkudrige, Belse, Surve, Belambár, Shinganmakki, Hadav, Kangil, Honnebail, Hichkad, Kodsani, Shirur, Bilehoyange, Manjguni, and Shetikeri.

by the hardier and valuable *Acacia Catechu*, which more readily than most trees adapts itself to poor and worn-out soils.

The forests form four groups, in the east two better groups nearer the hills, and in the west two poor groups nearer the sea. The eastern groups are Morse-Uppinattan in the south-east with twenty-seven villages and about 41,600 acres, and Hebbail-Yelvalli in the east with eight villages and 32,000 acres. The poorer coast groups are Antravalli-Bhandvâl in the north with twelve villages and 34,000 acres, and Ad-Manki in the south-west with nine villages and 20,500 acres.¹ The best forests are in the Morse-Uppinattan group, in the south-east in the valley of the Tadri river and its tributary the Bennihalla along the neighbouring hills between Uppinattan and the Nilkund and Doddamani passes. This group includes the forests of twenty-seven villages² with an approximate area of 41,600 acres or sixty-five square miles and a population of about 3000, chiefly Hâvik Brâhmans, Marâthâs, Halepaiks, Karivakkals, Musalmâns, and a few Christians. The greater part is good mixed forest with teak; best in the east but it is everywhere damaged by wood-ash tillage. Of leaf-shedding trees *matti* and *kindal* are the commonest with much *khair* on the lower ground. There are also heavy evergreen forests of which the best is in the Nilkund pass with poonspar and a little ebony, besides the usual large and lofty evergreen trees.

The next best forests are the Hebbail-Yelvalli group, to the north of the last group along both sides of the Devimane pass road between Sirsi and Kumta and stretching from the crest of the Sahyâdris at Devimane to the foot at Katgâl. This group includes the lands of eight villages³ with an area of 32,000 acres or fifty square miles and a population of 851, mostly Hâvik Brâhmans, Marâthâs, Karivakkals, Halepaiks, and Musalmâns. Though wood-ash tillage was formerly very general, there are some fine stretches of good timber, notably the splendid evergreen forests on both sides of the Devimane pass-road with many poonspars, *Calophyllum elatum*, and other lofty trees. There is little teak, but there are fine *matti*, *kindal*, *nandi*, *hedde*, *jâmba*, *manjuti*, *sagli*, and a great deal of *khair*. In the evergreen forests there is also a good deal of those fine woods, the *balge* *Vitex altissima*, and the *angeli* *Artocarpus hirsuta*; and the useful *baini* *Caryota urens* or wild sago-palm, and the valuable *tâlipat* palm *Corypha umbraculifera*.

The Antravalli-Bhandvâl group occupies the north of the sub-division between the Tadri river where it changes its course near Uppinattan and the Ankola sub-division, having for its eastern limits the villages of the Hebbail-Yelvalli group. It includes the lands of twelve villages⁴ with an approximate area of about fifty-three square

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Forests.
Kumta.

¹ Of 109 forest villages, only fifty-six have been arranged in groups; the remaining fifty-three which are small and more or less mixed with cultivation, cannot be arranged until the final settlement.

² The villages are Morse, Shamemane, Sappinahosalli, Mudanhalli, Meddhini, Ullur-math, Honageri, Amboli, Harvalli, Algâr, Hindabail, Hegadihosalli, Basolli, Sântgal, Divalli, Santeguli, Bastikeri, Bengane, Chimalli, Kavalade, Mudlige, Kalve, Kandale, Malvalli, Halvalli, Sirgunji, and Uppinattan.

³ The villages are Hebbail, Anegunde, Sântur, Belange, Alkod, Yân, Mattolli, and Yelvalli.

⁴ The villages are Antravalli, Divgi, Mirjân, Kodkani, Mugvekenvadi, Nagur, Betkuli, Bargi, Hiregutti, Kolimanjuni, Mâdageri, and Bhandvâl.

Chapter II. Production.

Forests. Kumta.

miles or 33,920 acres, and a population of about 7000, mostly Sárasvat and Sásastkar Bráhmans, Nádigars, Halepaiks, Hallakki-vakkals, Grámvakkals, Sherugars, Mukaris, and a few Havik Bráhmans, Musalmáns, and Christians. The forests are everywhere thin and have suffered much from wood-ash tillage. The chief leaf-shedding trees are, besides *khair* which is commonest, *matti*, *kindal*, *jámbo*, and some *kásarkán* or *Nux vomica*. In the evergreen forests there are the usual varieties including the *rámpatri* *Myristica laurifolia*, *dálchini* *Cinnamomum iners*, and the *baini* or sago palm.

The fourth or Hosád-Manki group occupies the south of the sub-division south of the Tadri river, and between the sea and the west boundary of the first group near Sántgal. It includes the forest lands of nine villages¹ with an area of about thirty-two square miles or 20,480 acres, and a population of about 5900 souls belonging to the same classes as the people of the third group, except that there are no Nádagars or Sherugars and that Hávik Bráhmans are more numerous. There are many betelnut gardens, *khair* is the prevailing tree, and all the varieties given for the Antravalli-Bhandvál group occur. There are some evergreen forests but of no great size. Wild pepper is gathered in the evergreen forests of Kallabbe and Murur.

The large bamboo seeded all along the coast in 1863-64 and in the inland parts during 1865-66. They were reproduced from self-sown seed and are now in use. The minor products are myrobalans, soapnuts, honey, cinnamon, wild nutmegs, wild pepper, vegetable ivory of the *Corypha umbreculifera* or *tálipat* palm, *shembe* bark, and canes. Myrobalans and soapnuts, which are not very plentiful, are gathered by the forest department, the other products, except canes which are free, are farmed.

Sirsi.

The southern division includes the forests of Sirsi, Siddápur, Honávar, and Bhatkal. Except Sirsi none of these forests have been marked off as reserved. The Sirsi forests are bounded on the north by Yellápur and Mundgod; on the east by Maisur and part of Hángal in Dhárwár; on the south by Maisur and Siddápur; and on the west by Kumta and Ankola. The forest area, including the lands of 269 villages, is calculated at 700 square miles. Of the 269 villages 131 have been surveyed. Of the 131 surveyed villages the forests of 122 have been settled, 103 ranking as protected and nineteen as reserved. The forest area may be divided into two belts, to the east and to the west of the Sirsi-Yellápur road which passes north and south through the heart of the sub-division. In the eastern belt there are six and in the western belt there are three forest groups. Beginning from the north the six eastern groups are Bilki-Bhartanalli in the extreme north with eleven villages and an estimated area of 38,400 acres; to the south Devarkallahalli-Adanhalli with eleven villages and 20,480 acres; to the east Basavankopp-Bhedasgaum with nineteen villages and 30,300 acres; to the south Sampekopp-Navánageri

¹ The villages are Hosád, Kallabbe, Karkimakhi, Murur, Hegale, Kujjalli, Konalli, Urkeri and Manki.

with fifty villages and 27,000 acres; to the east Hallikopp-Kadgod with thirty-three villages and 17,000 acres; and in the extreme south Kerkop-Mogavalli with twenty villages and 10,700 acres. Beginning from the north the three west belts are in the north-west Kadbál-Hulekal with eleven villages and 48,000 acres; in the west Manjguni-Devimane with eight villages and 33,280 acres; and in the south-west Kalgár-Shivgávi with eighteen villages and 118,400 acres.¹ The Bilki-Bhartanhalli group in the extreme north of the sub-division is still unsurveyed. It includes the forest lands of eleven villages,² with an approximate area of about sixty square miles and a population of about 600, mostly Hávik Bráhmans, Maráthás, Karivakkals, and a few Lingáyats, Sidis, and Musalmáns. There is abundance of fine teak and splendid *matti*, *kindal*, *nandi*, *shisham*, and *honi*, the *honi* unusually common and of great size. There are no evergreen forests and there is little cultivation. This splendid group, when settled, will form part of the great reserved block of not less than 200 square miles that is to be chosen from the best forests of Sirsi, Yellápur, and Mundgod. The large bamboo, which is almost the only kind, seeded in 1872-73. The new crop is splendid and is nearly-fit for use. The forests of this group have been worked regularly since 1867. For the first four years dead wood alone was gathered and taken to the Kátur-Singanhalli store. But since 1871 as the supply of dead-wood fell short of the demand 350 standing trees, each about fifty cubic feet, have been yearly felled and brought to the store. The average distance of the group from the store is fourteen miles. The felling and carrying charges amount to £1 6s (Rs. 13) the ton, and the sale price varies from £4 16s. to £10 (Rs. 48-Rs. 100). The *honi* is much fancied owing to its fine qualities and great size, and commands a better price even than teak.

The Devarkallahalli-Adanhalli group lies to the south of this block and also to the east of the Sirsi and Yellápur road. It includes the forest lands of eleven villages³ with an area of thirty-two square miles and a population of about 1820, almost entirely Háviks, Maráthás, and Hálepaiks with a few Musalmáns. Nearly the whole area is of leaf-shedding forests a good deal broken by spice gardens and rich cultivation with considerable pollarded tracts or *bettás*. Still some parts bear splendid *honi*, *matti*, and *kindal*; besides many other choice trees and a little sandalwood. The large bamboo, which is almost the only kind, seeded in 1872-73 and a splendid new crop is coming on. Timber is sent to Sirsi at a cost of 18s. (Rs. 9) a ton and sold at £2 to £4 (Rs. 20-Rs. 40). But there is little demand from Sirsi as other stores are better placed for the plain district to the north-east.

The Basvankopp-Bhedasgaum group in which are nineteen reserv-

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Forests.
Sirsi.

¹ Of 269 forest villages, the chief 181 villages have been arranged in groups; the remaining eighty-eight will be arranged at the final settlement.

² These villages are Bilki, Malkopp, Shirnále, Hotgeri, Mádangi, Jakkalli, Hullarmani, Jadjankopp, Bhendigeri, Savani, and Bhartanhalli.

³ The villages are Devarkallahalli, Kanenahalli, Kundargi, Sonda, Malenahalli, Arsapur, Hulgol, Belali, Shivalli, Bappanahalli, and Adanhalli.

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Forests.

Sirsi.

ed forests, lies to the east of the Devarkallahalli-Adanhalli group. These lands like the Bilki group border on the best forest of Yellapur in the north and of Mundgod in the east, and will be formed with them into one great reserve. The group includes the forests of nineteen villages¹ with an area of 30,336 acres of which 21,777 are reserved and 8559 protected. The population is 628, mostly Shonvi and Hávik Bráhmans, Maráthás, Halepaiks, Sonárs, Lingáyats, Vadars, Karivakkals, Sidis, Musalmáns, and a few Christians. Except in Togarhalli and Bhedasgaum where there are evergreen patches the whole forest is of leaf-shedding trees. The first twelve villages have teak, but except in Chippgeri, Amatgár, Kanchikopp, and Attabail, it is small. Unlike the teak the other trees are of great size.² There is also some sandalwood and bamboos of four useful kinds. The large bamboo seeded in 1872-73, but the new crop is not yet fit for use. In the evergreen forests of Bhedasgaum and Togarhalli there are the usual varieties of evergreen trees³ and abundance of *baini* or sago-palm. Wild elephants from Maisur last visited these forests in 1868. Except to meet local wants no timber has been felled in this group for twenty years.

The Sampekopp-Navánageri group of settled villages lies to the south of the Basavankopp-Bhedasgaum group in the fourteen miles of hill ranges between them and Sirsi. It includes the forests of fifty villages⁴ with an area of 26,965 acres and a population of about 4900, much like the people of the Basavankopp-Bhedasgaum group except that there are more Lingáyats. Most of these forests are evergreen, some of them large with fine lofty trees and wild sago-palms.⁵ In the best evergreen forests in Benage, Ekkambi, Hebballi, Gonur, Halgadde, Yesale, Sugaum, Kalgundikopp, Unachvalli, Bidarhalli, and Navánageri is abundance of fine jack, *Artocarpus hirsuta* and *angeli* *Artocarpus integrifolia*, *balge* *Vitex altissima*, *bakul* *Mimusops elengi*, and *devdari* *Cedrela Toona*. In the leaf-shedding forests are all the usual trees.⁶ They are of fair size but not to be compared to the trees in the Basavankopp group. Much sandalwood is found all over this group and bamboos are common but neither so abundant nor so good as in the Basavankopp forests. The large bamboo seeded in 1872-73 and some of the new crop is fit for use. Timber was taken from the Mádankeri, Malalgaum, Doddanhalli, and Mávinkopp forests in 1864 and sold at the Ekkambi store. None has since been felled except for local wants.

¹ The villages are Basavankopp, Tattihalli, Gánadhalli, Chittgeri, Chalgeri, Chippgeri, Amatgár, Unachgeri, Virápur, Kanchikopp, Hasalmani, Attabail, Bellambe, Shánvalli, Bijankopp, Tenkal, Umachalli, Togarhalli, and Bhedasgaum.

² The chief other trees are *matti*, *kindal*, *honi*, *nandi*, *jamba*, *hedde*, *goddahunshi*, *beliti* and *dindal*.

³ See above p. 40.

⁴ The villages are Sampekopp, Hostot, Bálekopp, Anagodekopp, Ullal, Muddebail, Vadgeri, Surgar, Jánmandi, Tuilkopp, Hudelkopp, Bisalkopp, Benage, Bugadikopp, Malalgaum, Ekkambi, Hebballi, Mavinkopp, Sannakeri, Kuppali, Bilur, Achanballi, Pur, Isur, HuliDEVANSARU, Gandhalli, Narebail, Gánageri, Gongatte, Doddanhalli, Gonur, Halgadde, Mádankeri, Kamankopp, Nurkalkopp, Husari, Landganhalli, Bhikkanhalli, Yesale, Bachgavi, Basalikopp, Bilgerikopp, Kabbi, Halsinkopp, Suggaum, Kalgundikopp, Vaddinkopp, Unachvalli, Bidarhalli and Navánageri.

⁵ The chief evergreen trees are given at p. 40.

⁶ See above p. 40.

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Production.Forests.
Sirsi.

The Hallikopp-Kadgod group lies to the south of Mundgod, between the Sampekopp-Navánageri group and the east of the district, and passing south to the Banvási-Sirsi road. It includes the forest lands of thirty-three villages¹ with an area of 16,893 acres and a population of about 5850 of the same classes as in the last group except that Lingáyats are more numerous. This group has many evergreen forests, some of them large, notably those of Bankanhal, Kandraji, Margundi, Kalkardi, Bengali, Madarhalli, Hadligi, Kanakapur, and Gudnapur. The trees are the same as in the Sampekopp forests quite equal to them in size, and with great numbers of *baini* or sago-palm. The wild Maisur elephants in their visits to Kánara generally passed through the evergreen forests of Hadligi and Margundi. The leaf-shedding forests of this group are fair and contain much excellent timber. There is no teak, but sandalwood is everywhere plentiful. Bamboos occur, but are not nearly so good or so abundant as in the other groups. The large bamboo seeded in 1872-73. In 1864 some logs were brought from the Phársi forests to the Banvási store. Except this there has been no cutting in this group.

The Kerkopp-Mogavalli group, to the south of the Sirsi-Banvási road, includes the forest lands of twenty villages² with an area of 10,689 acres and a population of 4760, mostly Lingáyats but also many of the classes before named. There is no teak and the leaf-shedding forests are thin except those of Kalli, Kop, and Kogodu, where are excellent *matti*, *kindal*, and *honi*. There is much sandalwood but little bamboo. The large bamboo seeded in 1872-73. There have been no recent cuttings. Many years ago some fine timber, mostly *honi* *Pterocarpus Marsupium*, was taken to build large houses in Sirsi. Every year as it matures, the sandalwood is gathered. The cost of preparing and carrying it to Sirsi is about 14s. (Rs. 7) the *khandi* of 560 pounds, and the sale price varies from £12 to £13 10s. (Rs. 120 - Rs. 135). There are a few evergreen forests of no great size. Those of Bhási and Narur are the best.

The condition of the western forests between the Yellápur-Sirsi road and the Sahyádris is not nearly so good as that of the north and north-eastern forests. The western forests have suffered from wood-ash tillage, from grazing clearings, and from leaf-lopping. Wood-ash tillage and grazing clearings have been stopped and leaf-loppings restricted to eight acres of forest or every acre of garden. Still there is a large unsatisfactory area, and in places even firewood has to be brought comparatively long distances. It is calculated that in this sub-division the area of garden land is not less than 5610 acres, requiring about 44,880 acres of forest and three-fourths of this area is

¹ The villages are Hallikopp, Kotikopp, Danaganhalli, Umude, Badanagod, Kálangi, Belankeri, Mattihalli, Kuppgaddi, Vaddal, Hoskopp, Bankanal, Málánji, Kandraji, Santvalli, Kirvatti, Phársi, Hebbatti, Kyádikopp, Andagi, Chandgeri, Margundi, Gudigeri, Kalkardi, Tandkopp, Bengali, Hárúkopp, Hadligi, Kanakapur, Madarhalli, Venktapur, Gudnapur, and Kadgod.

² The villages are Kerkopp, Somanhalli, Uplikopp, Umblekopp, Gulikatti, Kalli, Kop, Kogodu, Sahasravalli, Mundigehalli, Kantráj, Ajarne, Banavási, Tigani, Lingamatti, Bhási, Narur, Kalkop, Chikkadugli, and Mogavalli.

Chapter II.
Production.

Forests,
Sirsi.

in and near the Sahyádris. The best of the west Sirsi forests is the Kadbál-Hulekal group in the north-west. It includes the forest lands of eleven villages¹ with an area of about seventy-five square miles and a population of about 1070, mostly Háviks, Maráthás, Karivakkals, and a few Musalmáns. The forest is alternately leaf-shedding and evergreen, and most of both is good. In the leaf-shedding forests there is some good teak near the Muski pass and the Bedti river and a fine growth of *matti*, *kindal*, *honi*, *nandi*, and other fine varieties. The evergreen forests have also very good trees especially near the Sahyádris and the Bedti. This block is not everywhere open to carts. Most of it is rough and scarred by streams and ravines. But the timber can always be dragged to the Bedti and floated to the coast.

The Manjguni-Devimane group stretches, with an average breadth of about two miles, for twenty-seven miles along the Sahyádris from near Muski in the north-west close to the Nilkund pass in the south-west. It includes the forest lands of eight villages² with an area of about fifty-two square miles, and a population of about 1840, mostly Háviks, Maráthás, and Karivakkals. Almost the whole group is evergreen forest crowded with fine and lofty trees including the *Calophyllum elatum* or poonspar. Most of the bamboos along the Sahyádris belong to the small kind. But in many parts the large bamboo is common; it seeded in 1866-67. The Kalgár-Shivgávi group in the south-west of the sub-division, between the Sahyádris and the Yellápur-Sirsi road, includes the forest lands of eighteen villages³ with an approximate area of 185 square miles and a population of 6531, chiefly Háviks, Jains, Lingáyats, Maráthás, Karivakkals, Haslars, and Musalmáns, with a few Shenvis, Sárasvats, and Sonárs. The country abounds in splendid spice gardens and most of the forests are stripped for leaf manure or used as grazing grounds. Here and there are some fine evergreen groves whose sacredness has saved them from the axe. But except in these groves and some patches of leaf-shedding forest there is little but firewood. The *hirda* is found everywhere but does not grow to a large size. Sandálwood also occurs; bamboos are found only along streams and in cool woody spots. The minor products found in the Sirsi forests are myrobalans, soapnuts, honey, wild pepper, cinnamon, wild nutmegs, and canes. Myrobalans and soapnuts are gathered by the forest department, canes are free, and the other products are farmed.

The greatest recorded export of bamboos before the 1876 famine was 301,433. Since the famine the export has fallen to an average of about 160,000. Fires are common in the east except in the myrobalan tracts where they are well kept down.

¹ The villages are Kadbál, Shigehalli, Handimane, Modur, Nilkani, Naigár, Sálkani, Manadur, Devatimane, Menshigadde and Hulekal.

² The villages are Manjguni, Khursi, Badgi, Teppár, Hebbre, Bennagávi, Hosur, and Devimane.

³ The villages are Kalgár, Toranási, Hedigemane, Bettalli-Bhagi, Kengeri, Voni-gadde, Valabhagi, Agsál, Hanmanti, Shivalli, Bomanhalli, Hásangi, Bandal, Manjguni, Sampkhand, Mattigár, Tarchalli and Shivgávi.

Chapter II.

Production.

Forests.

Siddápur.

The Siddápur forests, none of which have been surveyed or demarcated, are bounded on the north by Sirsi; on the west by Honávar; and on the south and east by Maisur. They have an estimated area of 280 square miles and a population of about 31,000, chiefly Hávik and Shenvi Bráhmans, Lingáyats, Jains, Maráthás, Halepaiks, Karivakkals, Buruds, Haslars, Gramvakkals, and a few Musalmáns and Christians. Nearly one-half of the forests has been destroyed by wood-ash and grazing clearings or stripped for leaf manure. Clearing for wood-ash tillage and for grazing has been stopped and leaf-logging restricted. Still as every acre of spice garden requires eight acres of leaf-strippings and as there are 5146 acres of garden, over 40,000 acres or about one-fourth of the whole forest area is lopped for manure. The logging and stripping for leaf-manure greatly injures and in time kills the trees. In many parts areas that were formerly logging ground are now bare and much of what is now in use shows signs of being likely soon to become bare. The best forests are along the Sahyádris, those further inland, except some patches of preserved evergreen, being used almost entirely for leaf-stripping and branch-logging. For convenience of description the Siddápur forests may be divided into four groups, Balur-Nilkund to the north of the Muthalli river in the extreme north with sixteen villages¹ and an area of about seventy-four square miles; Muthalli-Bilgi south of the Muthalli river and north of the Siddápur Bilgi and Gundbala road in the centre with twenty villages² and seventy-five square miles; Aigod-Musvalli to the east of the Sirsi, Siddápur and Gersappa pass road with twenty-five villages³ and sixty square miles; and the Kodkani-Dodmane group in the south-west between the Bilgi-Gundbala road and the Shirávti river with seventeen villages⁴ and seventy-one square miles.

Separate population returns for each group are not available. It is denser in the north and east, and Lingáyats are specially numerous in the east and Hávik Bráhmans near the Sahyádris. The Sahyádris forests in the south-west are the best. They are mostly all evergreen with splendid trees of great size and height. East of the Sahyádris the forests are chiefly leaf-shedding and have been greatly stripped and pollarded for leaf manure. The best part of the Sahyádris forest is in the Kodkani-Dodmane group in the south-west where a belt about four miles broad runs from the Gersappa falls to Malemane near the boundary of Honávar, and thence about twelve miles north along the slopes to Dodmane and the Lushington

¹ The villages are Balur, Kibbli, Bannige, Vunchalli, Shivalimane, Hutgar, Hingar, Vumbalmane, Halibail, Shirguni, Bidramane, Hulande, Herur, Karajgi, Vajigod, and Nilkund.

² The villages are Muthalli, Hosmanji, Husur, Kastur, Kunaji, Nidgod, Sampgod, Kattekai, Huvimmane, Kelginmane, Golgod, Bidrakan, Balgulli, Kodgebail, Mattige, Mogeagar, Kadvadi, Godlabailu, Harigar, and Bilgi.

³ The villages are Aigod, Hasvante, Akunji, Arandur, Kalur, Heggekop, Malvalli, Dubbikop, Amblikai, Killar, Halgeri, Hulgod, Hosur, Holekop, Padvanbail, Kodtikop, Mugandur, Sairigi, Siddápur, Kolagi, Kangod, Kavachur, Nejur, Korlakani, and Musvalli.

⁴ The villages are Kodkani, Kudgund, Mattige, Tynashri, Keremane, Ettage, Bedkani, Menashi, Balgod, Kibbli, Kyadige, Talekari, Gunjgod, Ahlvalli, Sasigoli, Kalkai, and Dodmane.

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falls near Hostot, giving a well wooded area of about forty-eight square miles. All through the Gersappa pass the road lies in a splendid forest of evergreen trees of great height and bulk. The finest are the pónspar or *surhonne mara* *Calophyllum elatum*; *bobi mara* *Calophyllum Wightianum*; the wood-oil tree or *challani mara* *Dipterocarpus Indicus*; the wild nutmeg tree or *jajikai mara* *Myristica laurifolia*; *bakul mara* *Mimusops Elengi*; the wild jack or *angeli* *Artocarpus hirsuta*; cinnamon or *dálchini* *Cinnamomum Tamala*; *balage mara* *Vitex altissima*; black dammer tree or *rral-dhupa mara* *Canarium strictum*; *doddele mara* *Sterculia alata*; the wild sago palm *baini* *Caryota urens*, and all or most of the other evergreen trees which are common to this class of forest in Kánara. The gamboge tree or *arsinagurgi mara* *Garcinia Morella* is very common, as it also is in most of the evergreen forests of the Siddápur sub-division. In the south-west block back from or east of the Sahyádris there is about twenty-three square miles of leaf-shedding forest of *matti* *Terminalia tomentosa*; *kindal* *T. paniculata*; *nana* *Lagerstrœmia microcarpa*; and *karmal* *Dillenia pentagyna*, but mostly stripped and pollarded for leaf manure and broken by betel gardens. There is also a good deal of *hirda* *Terminalia Chebula* and a little sandalwood. Curiously enough, there is a little teak three miles down from the Gersappa falls on the northern slope looking into the Shirávatí river.

The Aigod-Musvalli group in the south-east has also some evergreen forest in the extreme south, and from the extreme south stretches north along the eastern boundary little beyond Aigod, a distance of about fifteen miles by three and a half broad, that is an area of about fifty-two square miles. This forest is leaf-shedding, mixed with patches of evergreen, which are greatly stripped and pollarded for leaf manure. The evergreen trees are mostly of the same varieties as those already mentioned, only not so large, the leaf-shedding forests include an inferior growth of *matti* *Terminalia tomentosa*, *kindal* *T. paniculata*, and *nana* *Lagerstrœmia microcarpa* with a good deal of *hirda* *Terminalia Chebula*, sandalwood, and *moha* *Bassia latifolia*.

The central Muthalli-Bilgi group with its twenty villages and area of seventy-five square miles has also some heavy evergreen forests on its extreme western end, and again about Muthalli and along the river which takes its name from that village where the trees are large and fine like those before described as belonging to the south-west group. This group, on a rough estimate, contains some twenty miles of evergreen forest, the rest is leaf-shedding with the same trees such as *matti*, *kindal*, *nana*, *karmal*, *moha* and sandalwood, only that the trees are better grown and there is also *honne* *Pterocarpus Marsupium*, *jámbe* *Xylia dolabriformis*, and much *hirda* *Terminalia Chebula*. The leaf-shedding forests of this group have been greatly destroyed by stripping and pollarding for leaf manure and by being everywhere broken by betel gardens. Lastly there is Balur-Nilkund group in the extreme north to the north of the Muthalli river with sixteen villages and seventy-four square miles. The leaf-shedding forests of this group are by far the best

and most extensive of the sub-division, and there is a great deal of excellent leaf-shedding timber particularly *honne* *Pterocarpus Marsupium* which is a first class wood and held next in esteem to teak. The *hirda* tree *Terminalia Chebula* is also specially common in this group and so is the *moha* *Bassia latifolia*, which, as in Khándesh, may hereafter prove of value as a spirit-yielding tree. The leaf-shedding area of this group cannot be less than about sixty-five square miles. Fine evergreen forest is also found near Nilkund and scattered over the whole area, and as in other Siddápur leaf-shedding forests there is much lopping of trees for manure, and betelnut gardens are everywhere common. Woodash tillage, which was once general along the Sahyádris, has for some years been greatly restricted. As in other sub-divisions a fee of 3d. (2 as.) is taken yearly on every head of cattle grazed in the forests. The Siddápur forests have never been worked for profit. Trees required for public works and local use are alone cut. The only exception is sandalwood which, as it ripens, is gathered by the forest department and sent twenty-four miles to Sirsi. The felling and carrying charges come to about £4 (Rs. 40) the ton and the sale realizes £48 to £54 (Rs. 480 - Rs. 540).

The large bamboo seeded in 1866-67 and the new crop is ready for use. The small bamboo *shibu* or *sheme* is used for floors and roofs. The minor products are myrobalans, soapnuts, honey, cinnamon, wild nutmegs, wild pepper, and canes. Myrobalans and soapnuts are gathered by the forest department; the other products, except canes which are free, are farmed.

The Honávar and Bhatkal forests, most of which are unsurveyed, are bounded on the north by Kumta; on the east by Maisur and Siddápur; on the south by South Kánara; and on the west by the Arabian Sea. The forests and waste lands of their 136 villages are estimated to cover an approximate area of 300 square miles. Wood-ash tillage was once general and in Bhatkal has destroyed nearly all the forests. It has for some years been greatly restricted.¹ Honávar has forests of both the leading varieties, leaf-shedding forests to the south of the Shirávati and evergreen forests to the north. They may be arranged under four groups, Hinnur-Gersappa in the south-east with nine villages and an area of ninety-nine square miles; Hegar-Manki in the south-west with eight villages and thirty square miles; Jámkadkal-Mahime in the north-east of the Shirávati with sixteen villages and sixty square miles, and Sálkod-Mallápur in the north-west with ten villages and twenty square miles.

The Hinnur-Gersappa group in the south-east is the best of the leaf-shedding forests. It includes the forest lands of nine villages² with an approximate area of ninety-nine square miles and a population of about 1170, mostly Sárasyat and Hávik Bráhmans, Maráthás, Karivakkals, Halepaiks, Gramvakkals, Sherugars, Musalmáns, and Christians.

Chapter II. Production.

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¹ In 1880-81 in Honávar 122 and in Bhatkal 143 acres were granted.

² The villages are Hinnur, Kodáni, Shirkur, Khandodi, Hádgeri, Begodi, Anegundi, Kalkatti, and old Gersappa.